III. EXISTING CONDITIONS, IMPACTS AND MITIGATION

E. Flora and Fauna

E. Flora and Fauna

1. Existing Conditions

a. Description and Mapping of Vegetative Communities found on the Site

Ecological Community Mapping

The ecological communities on the site were classified in accordance with *Ecological Communities of New York State*, (New York Natural Heritage Program, Draft second edition, January 2002). Field investigations to characterize the habitats were conducted by Evans Associates Environmental Consulting, Inc. (Evans Associates) on June 8, June 29, August 5 and August 30, in 2010 and on March 29, April 14, April 21, April 25, April 26, April 27, May 3 and May 25 in 2011. Species of plants that were documented on the site during the field investigations are listed in *Table III.E.1*.

In conjunction with the on-site field investigations a recent (2009) true color aerial photo was used in the mapping of the ecological communities. The resulting *Ecological Communities Map* is included as *Exhibit III.E-1*. Upland communities comprise 17.71 acres (94 percent) and wetland communities comprise 1.04 acres (6 percent) of the ±18.75 acre site.

The New York Natural Heritage Program (NY NHP) assigns each ecological community a numerical rank based on the global and state rarity of the community. Unlike individual species that are given the status of legally protected endangered or threatened, the NY NHP ranks for ecological communities carry no legal weight. The global (G) rank reflects the rarity of the community throughout the world and the state (S) rank reflects the rarity of the community within New York State. The NY NHP ranks range from 1 (G1 and S1) for very rare communities to 5 (G5 and S5) for communities that are common and demonstrably secure. The NY NHP rank of each community that occurs on the site is included in the discussion of each of the communities.

LEGEND

TC = Terrestrial cultural (8.54 ac.)
SSHF = Successional southern hardwood forest (25 ac.)
OTF = Oak-tulip forest (5.31 ac.)
SOF = Successional old field (0.61 ac.)
RMS = Red maple swamp (0.92 ac.)
VP = Vernal pool (0.12 ac.)

VP
RMS
SSHF
SOF
SSHF
RMS
SSHF
OTF
OTF
TC
SSHF
RMS
SSHF
TC

GRAPHIC SCALE
0 75' 150' 300'
(IN FEET)
1 inch = 150 ft.

TRC

TRC Engineers, Inc.
7 Skyline Drive
Hawthorne, New York 10532

Exhibit III.E-1
Ecological Communities Map

Source: Evans Associates Environmental Consulting, Inc.

COSTCO WHOLESALE
Town of Yorktown, New York

EAEC_DEIS_Figures-E-1 and E-3_NOV2011

Description of Ecological Communities

Terrestrial Cultural (TC) *Ecological Communities of New York State* classifies communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate or community as it existed prior to human influence as terrestrial cultural. The developed portions of the site that are comprised of the former motel buildings, fence contractor building, plant nursery, single family residences along with their associated paved parking areas and lawn areas were classified into the ecological community of terrestrial cultural. Although this community is highly disturbed there are several large (30 to 45 inch DBH) sugar maple (*Acer saccharum*) and swamp white oak (*Quercus bicolor*) trees present within the former motel area and within the active plant nursery. There is also a considerable amount of debris associated with the former motel as well as from illegal dumping around the motel buildings and parking lots. The terrestrial cultural community comprises approximately 9.54 acres, or 51 percent, of the ±18.75 acre site. The terrestrial cultural community is found throughout New York State and has a NY NHP rank of G5 S5, meaning it is demonstrably secure globally and demonstrably secure in New York State.

Successional Southern Hardwood Forest (SSHF) The forested areas around the perimeter of the developed areas on the site are best classified as successional southern hardwood forest community. This community comprises approximately 4.25 acres, or 23 percent, of the ±18.75 acre site. The successional southern hardwood forest is a broadly defined hardwood or mixed forest community that occurs on sites that have been disturbed or cleared. This community consists of younger, smaller trees that are typical in areas that have been relatively recently disturbed. However there are some larger trees mixed in with the smaller trees. Trees in this community include non-native invasive species such as tree-of-heaven (*Ailanthus altissima*) and black locust (*Robinia pseudoacacia*). Other trees in this community include black birch (*Betula lenta*), sugar maple, tuliptree (*Liriodendron tulipifera*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), black oak (*Quercus velutina*) and white oak (*Quercus alba*). The shrub layer is dominated by non-native invasive species such as multiflora rose (*Rosa multiflora*), Tartarian honeysuckle (*Lonicera tatarica*) and Japanese barberry (*Berberis thunbergii*) along with garlic mustard (*Alliaria petiolata*) and microstegium (*Microstegium vimineum*). Vine species include Oriental bittersweet (*Celastrus orbiculata*), poison ivy (*Toxicodendron radicans*), grape (*Vitis sp.*) and common greenbrier (*Smilax rotundifolia*). There is also a considerable amount of debris associated with the former motel as well as from illegal dumping in some parts of the site that is mapped as this community. The successional southern hardwood forest community is found

throughout New York State, is very common and has a NY NHP rank of G5 S5, meaning it is demonstrably secure globally and demonstrably secure in New York State.

Oak-tulip Tree Forest (OTF) The upland forested areas in the western third of the site consist of larger trees without the non-native invasive species that were present in the successional southern hardwood forest community. This forested area is best classified as an oak-tulip tree forest. The oak-tulip tree forest community is a mesophytic hardwood forest that occurs on moist, well drained sites in southeastern New York. This community is currently known in southeastern New York from the lower Hudson Valley primarily within the Hudson Highlands, but also in the Hudson Limestone Valley and western Long Island Coastal Lowland. The dominant trees in this community include American beech, black oak, red oak, white oak (*Quercus alba*), tulip tree, black birch, sugar maple and black cherry (*Prunus serotina*) trees and saplings. The understory is sparsely vegetated with saplings of the dominant tree species along with witch hazel (*Hamamelis virginiana*) shrubs. Whereas the herbaceous ground cover was dominated by the non-native species garlic mustard in the successional southern hardwood forest community herbaceous species identified in the oak-tuliptree community include native species such as Christmas fern (*Polystichum acrostichoides*), Pennsylvania sedge (*Carex pennsylvanica*), white wood aster (*Eurybia divarticus*), trout lily (*Erythronium americanum*) and wild-lily-of-the-valley (*Maianthemum canadensis*). The oak-tulip tree community comprises 3.31 acres, or 18 percent, of the ±18.75 acre site. The oak-tulip tree forest community has a NY NHP rank of G4 S2S3, meaning it is apparently secure globally and there are few remaining acres to limited acreage in New York State. The S2S3 rank is given to this community due to it only being found in southeastern New York.

Successional Old Field (SOF) The open grassy area over the abandoned septic field for the former motel is best classified as a successional old field. The dominant species in this area is the non-native, invasive weed mugwort (*Artemisia vulgaris*). In addition to mugwort, Queen Anne's lace (*Daucus carota*), common mullein (*Verbascum thapsus*) and goldenrods (*Solidago spp.*) are also common within the field and multiflora rose and wineberry (*Rubus phoenicolasius*) shrubs are also present in and around the perimeter of the field. This community comprises 0.61 acres or 3 percent of the ±18.75 acre site. The successional old field community is found throughout New York State, is very common and has a NY NHP rank of G4 S4, meaning it is apparently secure globally and apparently secure in New York State.

Red Maple Hardwood Swamp (RMS) The wetland corridor on the west side of the site and the wetland in the northeast corner of the site are best both classified as red maple hardwood swamps. Together these wetlands comprise 0.92 acres, or 5 percent, of the ±18.75 acre site. The north portion of the wetland on the west side of the site also contains a vernal pool that is

discussed in the section below. The dominant tree species in this wetland community is red maple (*Acer rubrum*) with some American elm (*Ulmus americana*), yellow birch (*Betula alleghaniensis*), green ash (*Fraxinus pennsylvanica*), swamp white oak (*Quercus bicolor*), ironwood (*Carpinus caroliniana*) and black gum (*Nyssa sylvatica*) also present. Shrub species identified in the wetland include spicebush (*Lindera benzoin*), sweet pepperbush (*Clethra alnifolia*), bebb willow (*Salix bebbiana*) and winterberry (*Ilex verticillata*). Herbaceous species identified include skunk cabbage (*Symplocarpus foetidus*), tussock sedge (*Carex stricta*), jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*). The red maple-hardwood swamp community is found throughout New York State and has a NY NHP rank of G5 S4S5, meaning it is demonstrably secure globally and apparently to demonstratably secure in New York State.

Vernal Pool (VP) The north end of the western wetland contains a vernal pool. Vernal pools are seasonally ponded wetlands that occur in uplands or within larger wetland systems. Vernal pools typically dry up in late summer to early fall and therefore do not contain fish. Vernal pools provide breeding habitat for several species of amphibians and invertebrates that rely on them to complete their life cycle. Vernal pool associated amphibian species that were identified on the site during the spring of 2011 field investigations include wood frog and spotted salamander egg masses. The vernal pool indicative invertebrate species fairy shrimp and fingernail clams were also found in the ponded portion of the wetland. Vegetation that was identified in the vernal pool includes red maple trees and saplings, sweet pepperbush and spicebush shrubs along with tussock sedge and skunk cabbage. The vernal pool community comprises 0.12 acres or less than 1 percent, of the ±18.75 acre site. The vernal pool community is found throughout New York State and has a NY NHP rank of G4 S3S4, meaning it is apparently secure globally and limited acreage to apparently secure in New York State.

Table III.E.1 - Plant Species Documented on the Site

Common Name	Scientific Name
TREES AND SAPLINGS	
Boxelder	*Acer negundo*
Japanese maple	*Acer palmatum*
Norway maple	*Acer platanoides*
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
Sugar maple	*Acer saccharum*
Tree-of-heaven	*Ailanthus altissima*
Yellow birch	*Betula alleghaniensis*
Black birch	*Betula lenta*
Ironwood	*Carpinus caroliniana*

Table III.E.1 - Plant Species Documented on the Site

Common Name	Scientific Name
Mockernut hickory	*Carya alba*
Shagbark hickory	*Carya ovata*
Flowering dogwood	*Cornus florida*
American beech	*Fagus grandifolia*
White ash	*Fraxinus americana*
Green ash	*Fraxinus pennsylvanica*
Eastern red cedar	*Juniperus virginiana*
Tuliptree	*Liriodendron tulipifera*
Apple	*Malus sp.*
Black gum	*Nyssa sylvatica*
Norway spruce	*Picea abies*
Cottonwood	*Populus deltoides*
Black cherry	*Prunus serotina*
White oak	*Quercus alba*
Swamp white oak	*Quercus bicolor*
Pin oak	*Quercus palustris*
Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
Bebb willow	*Salix bebbiana*
Sassafras	*Sassafras albidum*
American basswood	*Tilia americana*
Eastern hemlock	*Tsuga canadensis*
Black locust	*Robinia pseudoacacia*
American elm	*Ulmus americana*
Slippery elm	*Ulmus rubra*
SHRUBS	
Japanese barberry	*Berberis thunbergii*
Sweet pepperbush	*Clethra alnifolia*
Winged euonymus	*Euonymus alatus*
Witch-hazel	*Hamamelis virginiana*
Winterberry	*Ilex verticillata*
Spicebush	*Lindera benzoin*
Tartarian honeysuckle	*Lonicera tatarica*
Multiflora rose	*Rosa multiflora*
Wineberry	*Rubus phoenicolasius*
Bebb willow	*Salix bebbiana*
VINES	
Oriental bittersweet	*Celastrus orbiculata*
Virginia creeper	*Parthenocissus quinquefolia*
Common greenbrier	*Smilax rotundifolia*
Poison ivy	*Toxicodendron radicans*
Grape	*Vitis sp.*

Table III.E.1 - Plant Species Documented on the Site

Common Name	Scientific Name
HERBACEOUS	
Garlic mustard	*Alliaria petiolata*
Wild leek	*Allium tricoccum*
Wild garlic	*Allium vineale*
Jack-in-the-pulpit	*Arisaema triphyllum*
Mugwort	*Artemisia vulgaris*
Lurid sedge	*Carex lurida*
Pennsylvania sedge	*Carex pennsylvanica*
Tussock sedge	*Carex stricta*
Queen Anne's lace	*Daucus carota*
Hay scented fern	*Dennstaedtia punctilobula*
Trout lily	*Erythronium americanum*
White wood aster	*Eurybia divaricata*
Bedstraw	*Gallium sp.*
Wild geranium	*Geranium maculatum*
Jewelweed	*Impatiens capensis*
Soft rush	*Juncus effusus*
Duckweed	*Lemna sp.*
Wild-lily-of-the-valley	*Maianthemum canadense*
Microstegium	*Microstegium vimineum*
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Royal fern	*Osmunda regalis*
Christmas fern	*Polystichum acrostichoides*
Goldenrod	*Solidago sp.*
Sphagnum moss	*Sphagnum sp.*
Skunk cabbage	*Symplocarpus foetidus*
Common mullein	*Verbascum thapsus*

b. Description of Wildlife Species found on or Anticipated to be Found on the Site Based on Site Surveys and Review of Existing Data Sources

The undeveloped western portion of the site consists of upland forest and forested wetland communities that provide habitat for a variety of species of animals. However, the ability of the site to support less disturbance-tolerant species that require large blocks of undisturbed land is greatly diminished by the existing on-site development that includes the former motel, plant nursery, fence contractor building and single family residence. The site surroundings that consist of major roads, commercial and residential buildings along with paved parking lots also detract from the ability of the site to support disturbance intolerant species. Therefore, species that were documented on the site, or are expected to occur on the site, are those species that are tolerant

of human disturbance and are capable of using a variety of habitats (i.e., they are habitat generalists rather than habitat specialists).

Field investigations at the site were conducted by Evans Associates on June 8, June 29, August 5 and August 30, in 2010 and on March 29, April 14, April 21, April 25, April 26, April 27, May 3 and May 25 in 2011. The mammals, birds, reptiles and amphibians that were documented as occurring on the site are included in *Table III.E.2* and are discussed in the following sections. Species that were not documented on the site, but may potentially utilize the site based on review of available literature, are also included in *Table III.E.2*. No unique or rare habitats were identified on the site and all species that were documented on, or anticipated to occur on the site are species common to northern Westchester County.

Mammals Direct observations of animals or evidence of animals (e.g., tracks, scat) were made during the site field work. No species-specific mammal surveys or trapping were conducted. *New England Wildlife: Habitat, Natural History and Distribution* (DeGraaf and Yamasaki, 2001) was reviewed in order to assess what species of mammals could potentially be found in the habitats that are present on the site. White-tailed deer populations (*Odocoileus virginianus*) are well established in the vicinity of the site and were documented on the site. Other mammals that are common to the habitat types on the site include raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamius straiatus*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and white-footed mouse (*Peromyscus leucopus*). All mammals documented as occurring on, or anticipated to occur on, the site are species that are relatively tolerant of human disturbance, do not require large blocks of unfragmented land and are common to northern Westchester County.

Birds Bird observations were made during the field investigations but a formal breeding bird survey was not conducted on the site. Bird species that were documented on the site during the field investigations are indicated with an "X" in *Table III.E.2*. Data collected as part of the preparation of *The Second Atlas of Breeding Birds in New York State* (Cornell University, 2008) were also reviewed. Specifically, data collected between 2000 and 2005 for Survey Block 5957C, where the site is located, were reviewed. In total 54 species were documented as confirmed, probable or possible breeding in this survey block. Species on the breeding bird list for this survey block for which suitable habitat is present on the site are indicated by "BBA" in the documented on-site column in *Table III.E.2*.

The land use surrounding the site consists of the Taconic Parkway to the east, NYS Route 35/202 and residential development to the south, commercial development to the southwest, forested areas and residential development to the west and forested areas that are within the State parklands to the northwest

and north. Approximately half the site consists of developed areas that include the former motel, plant nursery, fence contractor building and single family residences along their associated paved parking areas. The western portion of the site includes forested upland areas and a narrow forested wetland corridor. These forested areas continue off the site to the north and west but are confined by the Bear Mountain Parkway to the west and Taconic Parkway to the east.

The forested habitat on the western portion of the site extends off site to the west and north and can provide habitat for bird species that favor forest interiors that are considered development sensitive species. However, all of the onsite portions of the forested areas are relatively close (within 300 feet) to some form of disturbance. Although some forest interior species (e.g., eastern wood peewee) may utilize the site for breeding they are severely limited by several factors. The breeding success of bird species that utilize forest interiors is greatly reduced near the edges of a forest due to what is known as the "edge effect". This is largely due to species of birds and small mammals preying upon the eggs and young of forest interior species, as well as nest parasitism from brown-headed cowbirds. The edge effect is most pronounced within 100 meters (330 feet) of the forest perimeter, but forest interior bird breeding success has been documented to be reduced to within 200 meters (660 feet) of the forest perimeter (Askins, 2000). It has also been shown that both the density of individuals and the number of species of neotropical migrants dropped off precipitously in forest blocks smaller than about 240 acres (Askins, 2000). The small size (18.75 acres) and shape of the site along with the proximity of disturbed areas on, and, around the perimeter of the site greatly limit the potential for the successful breeding of forest interior bird species. Rather species that are habitat generalists and tolerant of human disturbance such as the blue jay, European starling and American crow would most likely utilize the habitats on the site.

Reptiles and Amphibians An amphibian and reptile field survey was conducted by Evans Associates in the spring and early summer of 2011. The major focus of the spring portion of the field survey was the documentation of amphibian breeding activity. Ponded portions of the wetlands were examined to determine the presence/absence of amphibian egg masses, spermatophores, and/or larvae. In addition to visual searching dip netting was also conducted in the ponded areas to sample larval and adult amphibians as well as other aquatic life (e.g., fairy shrimp). Active searching for adult amphibians was conducted by turning over cover objects such as rocks, logs and anthropogenic debris. As best as possible cover objects were replaced in the same location that they were found. The spring field investigation also included listening for the characteristic mating vocalizations of various frog species. The focus of the early summer field surveys was to detect snakes and turtles as well as to continue to search for amphibians. Field techniques for detecting adult snakes and turtles included turning over cover objects and visual searching for

animals. A search for characteristic turtle nesting areas, as evidenced by the remains of turtle eggs, was also conducted. No amphibians or reptiles were collected as voucher specimens during the field survey. In addition to the field surveys amphibian and reptile species that are known to occur in the vicinity of the site were determined by reviewing *Amphibians and Reptiles of Connecticut and Adjacent Regions* (Klemens, 1993) along with data gathered for the *New York State Amphibian and Reptile Atlas Project* (NYS DEC, 1999).

During the 2011 spring field investigations a few (<5) wood frog and spotted salamander egg masses were found in the ponded area in the north end of the western wetland (Wetland A). An adult wood frog was also noted in this portion of the wetland during a site visit on August 5, 2010. This portion of the wetland was ponded on the last site visit in 2011 that was conducted on May 25. However, during the field investigations in 2010 there was no ponded water observed in the wetland on June 8 nor during any subsequent site visits that year which indicates that if any wood frogs or spotted salamanders utilized the vernal pool for breeding that year they were most likely not successful. During field work on the site that was conducted by Evans Associates for a previous applicant this portion of the wetland was noted as being ponded on August 31, 2000. Based on these observations it appears that this seasonally ponded area does provide breeding habitat for vernal pool species on some years but based on the low number of egg masses observed and unpredictable hydroperiod it is not a very productive vernal pool.

Turning over logs and debris in the forested portion of the site resulted in finding redback salamanders. The redback salamander is a very common and abundant terrestrial species that primarily inhabits forested habitats. Turning over the various forms of man-made debris in the disturbed portion of the site around the former motel building resulted in finding numerous eastern garter snakes. The abundant man-made debris on the site provides very good cover habitat for eastern garter snakes as well as for small mammals. Eastern garter snakes are very common and abundant and utilize a wide variety of habitats from undisturbed forests to highly disturbed urban settings. Although not documented on the site other species of snakes that could be found on the site include the northern ring-necked snake, northern black racer, black rat snake and northern brown snake. No turtles or evidence of turtle nesting were found on the site. Although not found on the site the eastern box turtle utilizes old field habitat and deciduous forest ecotones such as those found on and adjacent to the former motel septic area and could potentially utilize the site.

The adjacent State park property to the north of the site was also investigated for potential amphibian breeding habitat. Several small ponded areas were identified in the north end of the park that had wood frog and spotted salamander egg masses in them. These ponded areas appear to have been

created when the Bear Mountain Parkway was realigned. The relatively undisturbed forested areas between the site and these pools provides good post breeding upland habitat for wood frogs and spotted salamanders. The ponded areas are 800 to 900 feet from the subject site and therefore it is possible that the adult wood frog that was observed on the site in late summer of 2010 came from one of these pools. A relatively recently constructed stormwater basin that receives drainage from the Taconic Parkway is also present approximately 650 feet north of the site. No wood frog or spotted salamander egg masses were observed in the basin. The only amphibian observed in the basin was a single eastern American toad on the April 14, 2011 site visit. Spring peepers were also calling in an open canopy, emergent wetland that is adjacent to the Bear Mountain Parkway during this site visit. Although the eastern American toad and spring peeper were not observed on the site outside the breeding season both species are terrestrial and it is possible that they could utilize the habitats on the site. Both of these species of frogs are common and abundant in Westchester County.

Table III.E.2
Wildlife Species Documented on or Potentially Occurring on the Site

Common Name	Scientific Name	Documented on Site
MAMMALS		
Virginia opossum	*Didelphis virginiana*	
Northern short-tailed shrew	*Blarina brevicauda*	
Eastern mole	*Scalopus aquaticus*	
Star-nosed mole	*Condylura cristata*	
Little brown myotis	*Myotis lucifugus*	
Northern myotis	*Myotis septentrionalis*	
Big brown bat	*Eptesicus fuscus*	
Eastern cottontail	*Sylvilagus floridanus*	X
Eastern chipmunk	*Tamias striatus*	X
Woodchuck	*Marmota monax*	X
Gray squirrel	*Sciurus carolinensis*	X
Southern flying squirrel	*Glaucomys volans*	
White-footed mouse	*Peromyscus leucopus*	
Meadow vole	*Microtus pennsylvanicus*	
Norway rat	*Rattus norvegicus*	
House mouse	*Mus musculus*	
Coyote	*Canis latrans*	
Red fox	*Vulpes vulpes*	
Raccoon	*Procyon lotor*	X
Ermine	*Mustela erminea*	
Long tailed weasel	*Mustela frenata*	
Striped skunk	*Mephitis mephitis*	
White-tailed deer	*Odocoileus virginianus*	X

Table III.E.2
Wildlife Species Documented on or Potentially Occurring on the Site

Common Name	Scientific Name	Documented on Site
BIRDS		
Turkey vulture	*Cathartes aura*	BBA
Red-tailed hawk	*Buteo jamaicensis*	BBA
Mourning dove	*Zenaida macroura*	X, BBA
Chimney swift	*Chaetura pelagica*	BBA
Red-bellied woodpecker	*Melanerpes carolinus*	X, BBA
Downy woodpecker	*Picoides pubescens*	X, BBA
Northern flicker	*Colaptes auratus*	BBA
Eastern wood pewee	*Contopus virens*	BBA
Eastern wood-peewee	*Contopus virens*	BBA
Eastern phoebe	*Sayornis phoebe*	BBA
Great crested flycatcher	*Myiarchus crinitus*	BBA
Eastern kingbird	*Tyrannus tyrannus*	BBA
Yellow-throated vireo	*Vireo flavifrons*	BBA
Warbling vireo	*Vireo gilvus*	BBA
Blue jay	*Cyanocitta cristata*	X, BBA
American crow	*Corvus brachyrhyncos*	X, BBA
Barn swallow	*Hirundo rustica*	X, BBA
Black-capped chickadee	*Parus atricapillus*	X, BBA
Tufted titmouse	*Parus bicolor*	X, BBA
White-breasted nuthatch	*Sitta carolinensis*	X, BBA
House wren	*Troglodytes aedon*	BBA
Veery	*Catharus fuscescens*	BBA
American robin	*Turdus migratorius*	X, BBA
Gray catbird	*Dumetella carolinensis*	X, BBA
Northern mockingbird	*Mimus polyglottos*	X, BBA
European starling	*Sturnus vulgaris*	X, BBA
Cedar waxwing	*Bombycilla cedrorum*	BBA
Yellow warbler	*Dendroica pinus*	BBA
American redstart	*Setophaga ruticilla*	BBA
Northern cardinal	*Cardinalis cardinalis*	X, BBA
Chipping sparrow	*Spizella passerina*	BBA
Song sparrow	*Melospiza melodia*	BBA
Common grackle	*Quiscalus quiscula*	BBA
Brown-headed cowbird	*Molothrus ater*	BBA
Northern oriole	*Icterus galbula*	BBA
House finch	*Carpodacus mexicanus*	X, BBA
American goldfinch	*Carduelis tristis*	X, BBA
House sparrow	*Passer domesticus*	X, BBA
REPTILES AND AMPHIBIANS		
Redback salamander	*Plethodon cinereus*	X

Table III.E.2
Wildlife Species Documented on or Potentially Occurring on the Site

Common Name	Scientific Name	Documented on Site
Spotted salamander	*Ambystoma maculatum*	X
Eastern American toad	*Bufo a. americanus*	X
Northern spring peeper	*Pseudacris c. crucifer*	X
Wood frog	*Rana sylvatica*	X
Eastern box turtle	*Terrapene c. carolina*	
Northern ring neck snake	*Diadophis punctatus edwarsii*	
Northern black racer	*Coluber c. constrictor*	
Black rat snake	*Elaphe o. obsoleta*	
Northern brown snake	*Storeria d. dekayi*	
Eastern garter snake	*Thamnophis s. sirtalis*	X

NOTES:
"X" indicates species documented on the site.
"BBA" for birds indicates listed in the New York Breeding Bird Atlas for survey block 5957C for 2000 to 2005 and suitable habitat is present on the site for this species.

c. Assess Potential Presence of Wildlife Corridors on the Site

The land use surrounding the site consists of the Taconic Parkway to the east, NYS Route 35/202 and residential development to the south, commercial development to the southwest, forested areas and residential development to the west and forested areas that are within parkland to the northwest and north. Approximately half the site consists of developed areas that include the former motel, plant nursery, fence contractor building and single family residences along with their associated paved parking areas. The site is not part of an unbroken forested corridor that could serve as a larger scale wildlife corridor.

The forested areas between the vernal pool in the north end of the western wetland and the forested areas in the far western portion of the site as well as the forested areas off site to the north in the adjacent parkland could be considered wildlife corridors for wood frogs and spotted salamanders. Although not distinct corridors wood frogs and spotted salamanders would use these forested areas to move between their spring breeding habitat in the vernal pool to their non-breeding terrestrial habitat in the forest. However, as discussed in Section III.E.1.b., above the seasonally ponded area in the north end of the western wetland does provide breeding habitat for vernal pool species on some years but based on the low number of egg masses observed and unpredictable hydroperiod it is not a very productive vernal pool.

d. Discuss the "Biodiversity Conservation Study" (June 2009) Prepared by Sterns & Wheeler as it Relates to the Site

The "*Biodiversity Conservation Study, Town of Yorktown, Westchester County, New York*" (Sterns & Wheler, June 2009) was reviewed as it relates to the site. The purpose of the Biodiversity Conservation Study was to document existing conditions and quantify biodiversity at selected sample locations, review current environmental regulatory measures to protect the environment in the Town and make recommendations to more effectively conserve biodiversity within the Town. Based on review of Figure 1, in the *Biodiversity Conservation Study* there were no sample locations on, or adjacent to the site. The closest sample locations are located approximately 0.75 miles southwest of the site and 1.1 miles west of the site.

Environmentally sensitive resources are identified in the *Biodiversity Conservation Study*. The environmentally sensitive resources identified include wetlands, water bodies and vernal pools, Critical Environmental Areas (CEAs), riparian areas, floodplains, hydric soils, steep slopes, parks and open space. The wetlands including a vernal pool that are on the site are discussed in Section III.E.1.a. above. County and State parklands are designated as CEAs in Westchester County. Franklin Delano Roosevelt Park that is located to the south of the site, south of NYS Route 35/202 is designated as a CEA. There are no riparian areas or floodplains on the site. The soils in the wetlands on the site are hydric soils. The embankment that is adjacent to the west side of the Taconic Parkway that is just off the east side of the site is considered a steep slope.

The *Biodiversity Conservation Study* lists vernal pools and wildlife corridors as sensitive habitats. The vernal pool that is within the north end of the western wetland on the site is described in Section III.E.1.a. above. Wildlife corridors were discussed in Section III.E.1.c. above.

e. Review of "Croton on Hudson Biodiversity Plan" (2004) Prepared by the Metropolitan Conservation Alliance as it Relates to the Site

The "*Croton-to-Highlands Biodiversity Plan*" (Miller and Klemens, 2004) that was prepared by the Metropolitan Conservation Alliance (MCA) was reviewed as it relates to the site. The *Biodiversity Plan* identifies areas that are important for biodiversity in Cortlandt, Yorktown, Putnam Valley and the western portion of New Castle. The site is not within any areas that were identified as important for biodiversity. The closest biotic planning unit (BPU) to the site is located to the west of the Bear Mountain Parkway and north of NYS Route 202/35. This BPU is called Sylvan Glen and vicinity (biodiversity area #20 on Figure A, Croton-to-Highlands Biodiversity Map in the *Biodiversity Plan*).

The MCA utilizes what is called a "Focal Species Approach" in assessing the health of an ecosystem. Certain species of animals respond specifically to development impacts. These species are termed "focal taxa" and can

generally be divided into "development-sensitive" species and "development-associated" species. Development-sensitive species are those species that are typically habitat specialists that are compromised by development. Development-associated species are those species that are habitat generalists that tend to favor habitats that have already been degraded or altered by humans. A list of Focal Species of the Croton-to-Highlands region is presented in Appendix A of the *Biodiversity Plan*. Species of birds that utilize the site would primarily be development associated species such as blue jay, American crow, European starling, common grackle, house finch and house sparrow. These species are found in edge habitats and smaller blocks of forest and are relatively tolerant of human disturbance. The eastern garter snake is also a development-associated species that was common in the previously disturbed portions of the site. The spotted salamander and wood frog are considered development-sensitive species. A small number (<5) of wood frog and spotted salamander egg masses were found in the ponded area in the north end of the western wetland. A single adult wood frog was observed on the site but no adult spotted salamanders were found. Outside the breeding season wood frogs and spotted salamanders are terrestrial species that are primarily found in forested habitats. These species typically would not utilize the open canopy, disturbed portions of the site. Rather they would utilize the forested habitats on the western portion of the site as well as the forested areas in the parkland off site to the north.

f. Provide Assessment of the Potential Presence of any Rare, Threatened or Endangered Species on the Site Based on Site-specific Survey and input from the New York Natural Heritage Program and the US Fish and Wildlife Service

The potential for threatened, endangered or protected species to occur on the site was assessed by: 1) contact with the New York Natural Heritage Program (NY NHP) regarding known records of protected species on and in the vicinity of the site, 2) reviewing the United States Fish and Wildlife Service (US F&WS) list of federally listed species for Westchester County, New York and, 3) site field studies. The results of these analyses are discussed below.

Contact with the NY NHP A request was made by Evans Associates to the NY NHP regarding any known occurrences of endangered, threatened or special concern species of plants or animals or significant habitats on, or in the vicinity of, the site. The response letter from the NY NHP dated August 26, 2010 indicates that they have no known records of rare or State-listed animals or plants, significant natural communities, or other significant habitats, on, or in the immediate vicinity of the site. A copy of the response letter from the NY NYP is included in the Appendix C of this DEIS.

Federally Listed Species The US F&WS provides a list of federally listed endangered and threatened species and candidate species by each County in

New York. The list for Westchester County contains six species, one of which (Bald Eagle) was delisted in August of 2007. Two of the other species listed, Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum*), are fish species found primarily in the Hudson River, and are therefore not of concern in Yorktown. The three remaining species are discussed below along with their habitat requirements and potential to be impacted by the proposed project.

Bog turtle (*Clemmys muhlenbergii*) The bog turtle is a Federal listed threatened species and a State listed endangered species. Bog turtles are a wetland-dependant species with very specific habitat requirements. Habitat assessment for this species includes investigating all wetlands on or near the project site and evaluating whether suitable hydrology, soils and vegetation are present to provide bog turtle habitat. Each of the three criteria that are required for bog turtle habitat are summarized below as presented in "Bog Turtle (*Clemmys muhlenbergii*) – Northern Population Recovery Plan" (US Fish & Wildlife Service, May 2001, revised April 2006).

1) *Suitable Hydrology*. Bog turtle wetlands are typically spring-fed with shallow surface water or saturated soils present year-round, although in summer the wet area(s) may be restricted to near spring head(s). Shallow rivulets or pseudo-rivulets are often present. Typically the wetlands are interspersed with dry and wet pockets.

2) *Suitable Soils*. Usually the bottom substrate is soft muck or in some portions of the species' range, the soft substrate consists of scattered pockets of peat (6+ inches deep) instead of muck.

3) *Suitable Vegetation*. Dominant vegetation in bog turtle habitat consists of low grasses and sedges (emergent wetland), often with a scrub-shrub wetland component. Nesting habitat consists of open areas with tussocky or hummocky vegetation.

Based on field investigations the wetlands on the site do not meet the criteria for potential bog turtle habitat. Therefore, the Proposed Action does not pose a threat to this species.

Indiana bat (*Myotis sodalis*) The Indiana bat is a Federal and State listed endangered species. In New York, knowledge of the distribution of this species is primarily limited to known wintering locations in caves and mines in which they hibernate (hibernacula). There are eight known Indiana bat hibernacula in New York (NYS DEC Indiana Bat Fact Sheet). The major potential impact to Indiana bats is disturbance of the hibernacula, since this is the most vulnerable period in the life-cycle of this species. Many of the non-hibernating habitat requirements of this species are not well understood.

Outside the hibernation period, Indiana bats roost during the day in a variety of species of live, dying or dead trees (snags). Roost trees typically have exfoliating, peeling or loose bark, or contain cracks or crevices that could be used as shelter by the bats. In the Northeast, most roost trees used by Indiana bats are mature deciduous trees. Smaller trees have been documented as being used as roost trees, but generally Indiana bats, particularly females, prefer larger trees that afford a greater thermal mass for heat retention. Females appear to be more habitat specific than males, presumably because of the warmer temperature requirements associated with gestation and rearing young. Overall, roost tree structure and solar exposure tends to be more important than the species of tree.

During the spring and summer months, Indiana bats utilize a wide variety of foraging habitats where flying insects are present. Streams associated with floodplain forests and impounded water bodies (ponds, wetlands, reservoirs, etc.), where abundant supplies of flying insects are present, provide preferred foraging habitat for Indiana bats. Indiana bats also forage in the canopy of upland forests, over clearings with early successional vegetation, along the borders of croplands, along wooded fencerows, and over farm ponds in pastures.

Based on site observations and knowledge of the Town of Yorktown, there are no caves or abandoned mines on or near the site that could be utilized as a potential Indiana bat hibernacula. Therefore, it is concluded that no Indiana bat hibernating habitat exists on or near the site. The closest known hibernaculum to the site is located over 40 miles from the site in Ulster County, on the west side of the Hudson River.

Although not documented on the site the forested areas on the site could potentially provide roosting and foraging habitat for the Indiana bat. In order to avoid potential disturbance to roosting bats the US F&WS Indiana Bat Project Review Fact Sheet (September 2010) recommends that the removal of potential roost trees be conducted between October 1 and March 31. Accordingly, tree clearing activities will be conducted between these dates when the bats would not be present at the site.

New England cottontail (*Sylvilagus transitionalis*) The New England cottontail is presently a candidate for Federal listing and in New York State is listed as a special concern species. Unlike species listed as threatened or endangered Federal candidate species and State special concern species are given no additional legal protection. This species is virtually indistinguishable from the more abundant Eastern cottontail (*Sylvilagus floridanus*) in the field, but studies have shown that the species has been disappearing from its historic range over the last 50 years. The New England cottontail's preferred habitat is early successional forest thickets with dense, tangled vegetation. Based on the field investigations this habitat type is not

found on or adjacent to the site. Therefore, the project will not have an adverse impact on this species if it does occur in the vicinity of the site.

Site Field Investigations Field investigation were conducted at the site on June 8, June 29, August 5 and August 30, in 2010 and on March 29, April 14, April 21, April 25, April 26, April 27, May 3, May 25 in 2011. The results of the ecological community characterization field investigations are discussed in Section III.E.1.a. and the species of plants documented on the site are included in *Table III.E.1*. None of the species of plants that were documented on the site are considered rare or are listed as protected species. The results of the wildlife field investigations are discussed in Section III.E.1.b. and the wildlife species documented on or potentially occurring on the site are listed in *Table III.E.2*. None of the species of animals that were documented on the site are considered rare or are listed as protected species.

g. Provide Tree Survey Within the Proposed Limit of Disturbance in Accordance with the Town of Yorktown Requirements and Indicate which Trees will be Protected and/or Removed

A tree survey within the proposed limit of disturbance was conducted by Evans Associates. The tree survey was conducted in accordance with Chapter 270, Preservation of Yorktown's Forested Environment, of the Code of the Town of Yorktown. A protected tree is defined in Chapter 270 as, "Any tree, either deciduous or coniferous, having a diameter at breast height (DBH) of six inches or greater and a minimum height of 25 feet." In addition a specimen tree is defined in Chapter 270 as, "Any tree with a DBH of 18 inches or greater; any tree of the species American chestnut (*Castanea dentata*), copper beech (*Fagus sylvatica*), flowering dogwood (*Cornus florida*)."

All trees within the proposed limit of disturbance with a DBH of 6 inches or greater were marked with a numbered tag, measured for DBH and located. The trees were also assigned a health class of 1 to 5 with 1 being a large, healthy tree with little to no defects to 5 being a dead standing tree. In total, 668 trees with a DBH of 6 inches or greater were identified within the proposed limit of disturbance. The clearing and grading activities required to develop the site would necessitate the removal of all trees within the proposed limit of disturbance. The results of the tree survey are summarized in *Table III.E.3* below. The location and identification number of the trees on the site that are within the proposed limit of disturbance are depicted on *Exhibit III.E-2*.

LEGEND

74 TREE LOCATION - PREVIOUSLY SURVEYED

303 TREE LOCATION - FIELD ESTIMATED

681 TREE LOCATION - GPS LOCATED

PROPOSED LIMIT OF DISTURBANCE

GRAPHIC SCALE

0 75' 150' 300'

(IN FEET)
1 inch = 150 ft.

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Exhibit III.E-2
Tree Survey Map

Source: Evans Associates
Environmental Consulting, Inc.

COSTCO WHOLESALE
Town of Yorktown, New York

As can be seen from *Table III.E.3* sugar maple is by far the most common tree on the site within the proposed limit of disturbance. Other common trees that comprise 10 percent or greater of the trees identified include black birch, tree-of-heaven and tuliptree. Oaks species (black oak, red oak, pin oak, white oak and swamp white oak) also comprise approximately 11 percent of trees within the proposed limit of disturbance. Other common trees that comprise between 5 and 10 percent of the trees within the proposed limit of disturbance include red maple, American beech and black locust. An additional 20 species of trees each comprise less than 5 percent of the trees identified.

Of the trees identified within the proposed limit of disturbance 140 have a DBH of 18 inches or greater and would therefore be considered specimen trees in accordance with Chapter 270 of the Town Code. Most (about one third) of the specimen trees are sugar maple or tuliptree with white oak, black oak, tree-of-heaven and red oak also comprising greater than 5 percent of the specimen trees. In addition to larger trees flowering dogwood are considered specimen trees in accordance with the Town Code. There are three flowering dogwood trees within the proposed limit of disturbance.

Table III.E.3
Summary of Tree Survey Data

Common Name	Scientific Name	Number	Percent
Sugar maple	*Acer saccharum*	127	19
Black birch	*Betula lenta*	97	15
Tree-of-heaven	*Ailanthus altissima*	87	13
Tuliptree	*Liriodendron tulipifera*	67	10
Red maple	*Acer rubrum*	58	9
Black locust	*Robinia pseudoacacia*	38	6
American beech	*Fagus grandifolia*	34	5
Black oak	*Quercus velutina*	30	5
American elm	*Ulmus americana*	25	4
White ash	*Fraxinus americana*	18	3
Red oak	*Quercus rubra*	17	3
White oak	*Quercus alba*	14	2
Black cherry	*Prunus serotina*	7	1
Cottonwood	*Populus deltoides*	6	1
Swamp white oak	*Quercus bicolor*	6	1
Mockernut hickory	*Carya glabra*	5	1
Sassafras	*Sassafras albidum*	4	1
Eastern hemlock	*Tsuga canadensis*	3	<1
Eastern red cedar	*Juniperus virginiana*	3	<1
Flowering dogwood	*Cornus florida*	3	<1
Pin oak	*Quercus palustris*	3	<1
Shagbark hickory	*Carya ovata*	3	<1

Table III.E.3
Summary of Tree Survey Data

Common Name	Scientific Name	Number	Percent
Silver maple	*Acer saccharimum*	3	<1
Box elder	*Acer negundo*	2	<1
Norway maple	*Acer platanoides*	2	<1
Norway spruce	*Picea abies*	2	<1
American basswood	*Tilia americana*	1	<1
Apple	*Malus sp.*	1	<1
Japanese maple	*Acer palmatum*	1	<1
Slippery elm	*Ulmus rubra*	1	<1
	Total	668	100

2. Potential Impacts

a. Quantification of Vegetative Communities to be Disturbed, Protected or Removed Based on the Proposed Limit of Disturbance

In order to assess impacts to the ecological communities on the site the proposed limit of disturbance line as determined by the project engineer was overlain on the *Ecological Communities Map* (*Exhibit III.E-1*) resulting in the *Ecological Communities Impact* Map (*Exhibit III.E-3*). The existing area of each of the six communities identified on the site and the proposed impact to each community are presented in *Table III.E.4*. As can be seen from *Table III.E.4*, the ecological communities that will be the most impacted by the Proposed Action are the disturbed habitats that include the terrestrial cultural, successional old field and successional southern hardwood forest communities. The more valuable, relatively undisturbed oak-tulip forest that occupies the western portion of the site will remain largely undisturbed. The wetland communities that consist of the red maple hardwood swamp and vernal pool will remain undisturbed by the Proposed Action.

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Exhibit III.E-3
Ecological Communities Impact Map

Source: Evans Associates Environmental Consulting, Inc.

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Town of Yorktown, New York

EABC_DEIS_Figures-E-3 thru E-3_NOV2011

Table III.E.4
Existing and Proposed Impacts to Ecological Communities

Ecological Community	Existing (acres)	Impacted (acres)
Terrestrial cultural (TC)	9.54	9.26
Successional southern hardwood forest (SSHF)	4.25	3.43
Oak-tulip forest (OTF)	3.31	0.76
Successional old field (SOF)	0.61	0.61
Red maple swamp (RMS)	0.92	0
Vernal pool (VP)	0.12	0
Total	±18.75	±14.06

b. Describe Impacts to Existing Resident Plant and Animal Populations, Especially Threatened and/or Endangered Species

As discussed in the previous section the proposed project will primarily occur in the previously disturbed portions of the site that consist of the former motel, active plant nursery, fence contractor building, single family residences and their associated paved parking areas. The successional southern hardwood forest and successional old field habitats will also be impacted by the proposed development. The plant species present in these communities are discussed in detail in Section III.E.1.a. The dominant plant species in these communities consist of invasive and/or non-native species such as tree-of-heaven, black locust, multiflora rose, Tartarian honeysuckle, Japanese barberry, Oriental bittersweet, garlic mustard and mugwort. No threatened, endangered or rare plant species were found in these habitats or anywhere else on the site.

As discussed in Section III.E.1.e. species of animals that currently utilize the ecological communities that are to be disturbed are those species that are described as development associated species. These species are habitat generalists and are typically found in a range of habitats including suburban residential settings. The small mammals, reptiles and amphibians that utilize the portions of the site that are to be disturbed would be displaced by the proposed development. Bird species that utilize the portions of the site that are proposed to be disturbed would be temporarily displaced during construction but it is likely that some of the disturbance tolerant bird species would utilize the new landscape plantings within the new development. As discussed in Section III.E.1.f. based on information from the NY NHP and US F&WS along with site surveys it is unlikely that any threatened, endangered or rare animal species would be found on the site that could be impacted by the proposed development.

c. Describe Potential Impacts to Wildlife Corridors, if Present on the Site

As discussed in Section III.E.1.c. the site is not part of an unbroken forested corridor that serves as a larger scale wildlife corridor that could be impacted by the proposed project. The smaller scale wildlife corridor that allows for the movement of vernal pool breeding amphibians between the seasonally ponded area in the north end of the western wetland and on and off site forested areas to the west and north of the wetland will not be impacted by the proposed project.

3. Proposed Mitigation

a. Include Analysis of Remaining Vegetated Buffer and Proposed Landscaping and Consider Use of Permeable Surfaces and Vegetation

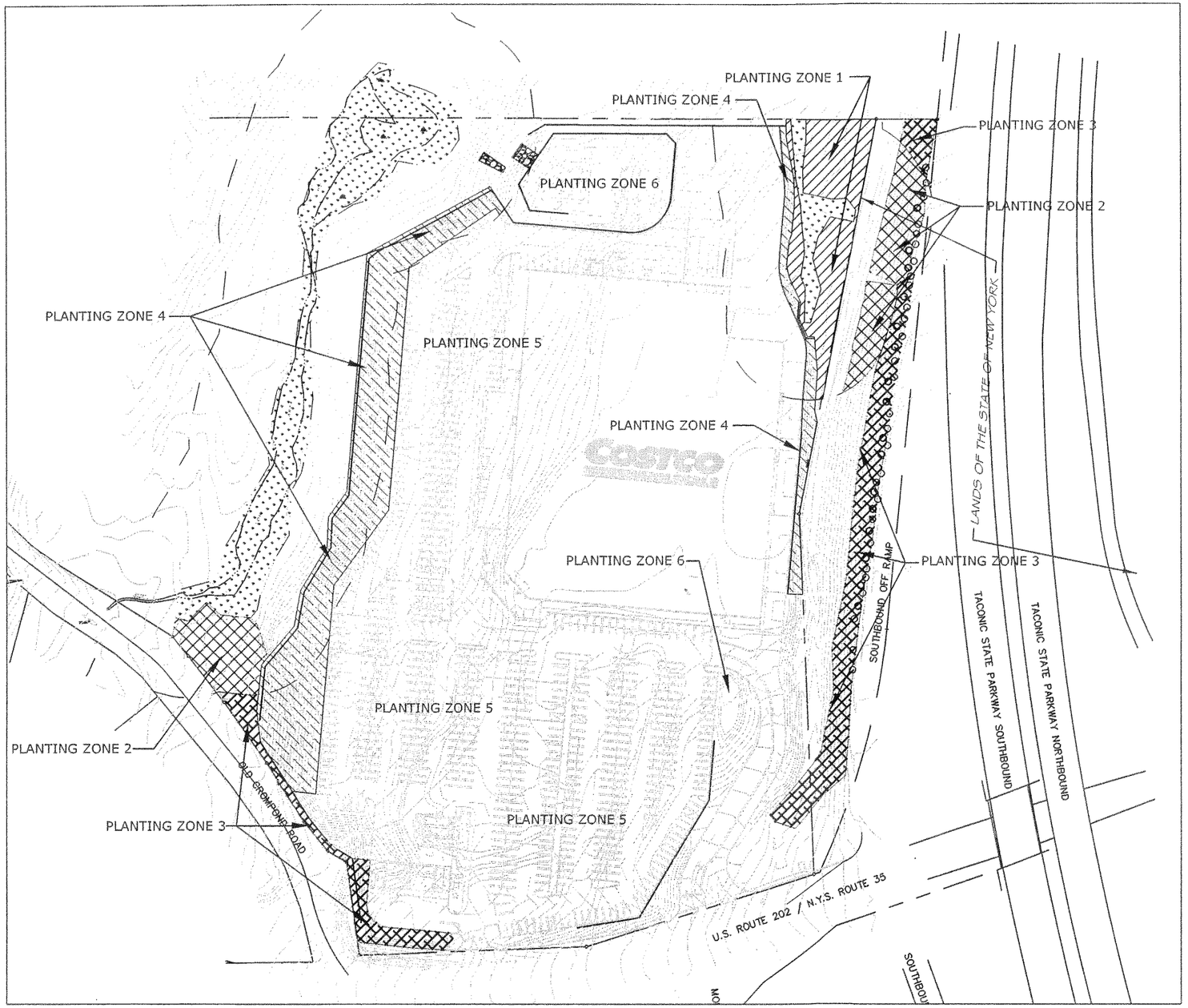
The remaining vegetated buffer outside the proposed limit of disturbance consists of the forested wetland corridor and mature forested areas on the west side of the site. The forested wetland corridor and upland forested areas on the west side of the site are the least disturbed ecological communities on the site. These higher value communities will remain largely undisturbed by the proposed project. A detailed description of these ecological communities on the site is presented in Section III.E.1.a. The proposed conceptual landscaping plan is discussed in the next section.

The design of the Project employed several green infrastructure practices that preserve and minimize impact to natural resources and reduce impervious cover, thereby minimizing potential impacts to flora and fauna. The planning techniques are discussed in detail in Section III.G.3.a.

Improved pervious surfaces, such as pervious pavements, were considered but not proposed as their effectiveness is greatly diminished in northern climates where snow removal, sanding and deicing are common.

b. Provide a Conceptual Landscaping Plan. Include Wildlife Mitigation Measures, if Required

The conceptual landscaping plan is depicted on *Exhibit III.E-4, Conceptual Planting Zones Plan* and *Exhibit III.E-5, Conceptual Planting Plan.* The landscaping plan is intended to vegetatively enhance areas of the site that are currently disturbed, vegetatively enhance and stabilize areas proposed to be disturbed, provide wildlife habitat and provide visual screening from the surrounding roads. There are six different planting zones proposed as depicted on *Exhibit III.E-4.* Species and type of plants that are proposed within each of the zones are depicted on *Exhibit III.E-5.*



PLANTING ZONE LEGEND

- PLANTING ZONE 1 - Wetland Buffer Enhancement Planting
- PLANTING ZONE 2 - Wetland Buffer Enhancement & Road Screen Planting
- PLANTING ZONE 3 - Road Screen Planting
- PLANTING ZONE 4 - Wetland Buffer Slope Replanting
- PLANTING ZONE 5 - New Parking Lot Ornamental & Street Tree Planting
- PLANTING ZONE 6 - Stormwater Management Facility Planting

Please refer to Figure III.E-5 for conceptual planting layout.

GRAPHIC SCALE

0 75 150 300

(IN FEET)

1 inch = 150 ft.

TRC Engineers, Inc.
7 Skyline Drive
Hawthorne, New York 10532

Exhibit III.E-4

Conceptual Planting Zones Plan

COSTCO WHOLESALE

Town of Yorktown, New York

Source: Evans Associates Environmental Consulting, Inc.

PLANTING ZONE SPECIES RECOMMENDATIONS:

ZONE 1 - WETLAND BUFFER ENHANCEMENT PLANTING

		Size at Planting:
Trees:		
Acer rubrum / Red Maple *Betula nigra* / River Birch *Platanus occidentalis* / Sycamore *Quercus bicolor* / Swamp White Oak *Quercus palustris* / Pin Oak	10-12 Large Deciduous Trees	2" Caliper
Shrubs:		
Alnus incana / Speckled Alder *Aronia arbutifolia* / Red Chokeberry *Cornus racemosa* / Gray Dogwood *Corylus americana* / American Hazelnut *Hamamelis virginiana* / Common Witchhazel *Ilex verticillata* / Winterberry *Lindera benzoin* / Spicebush	40 Medium Deciduous Shrubs	24-30" ht.
Rosa palustris / Swamp Rose *Vaccinium corymbosum* / Highbush Blueberry *Viburnum dentatum* / Arrowwood Viburnum	50 Small Deciduous Shrubs	18-24" ht.

ZONE 2 - WETLAND BUFFER ENHANCEMENT & ROAD SCREEN PLANTING

Trees:		
Juniperus virginiana / Eastern Red Cedar *Picea glauca* / White Spruce *Pinus flexilis* / Limber Pine *Pinus strobus* / Eastern White Pine	30 Large Evergreen Trees	10-12' ht.
	12 Small Evergreen Trees/ Medium Evergreen Shrubs	6-8' ht.
Shrubs:		
Aronia melanocarpa / Black Chokeberry *Clethra alnifolia* / Summersweet *Corylus americana* / American Hazelnut *Ilex glabra* / Inkberry *Kalmia latifolia* / Mountain Laurel *Myrica pensylvanica* / Northern Bayberry *Prunus maritima* / Beach Plum *Rosa virginiana* / Virginia Rose *Spirea latifolia* / Meadowsweet *Vaccinium corymbosum* / Highbush Blueberry *Viburnum dentatum* / Arrowwood Viburnum	75-80 Small / Medium Deciduous Shrubs	24-30" ht.
	20-25 Small Evergreen Shrubs	24-30" ht.

ZONE 3 - ROAD SCREEN PLANTING

Trees:		
Abies concolor / White Fir *Abies fraseri* / Fraser Fir *Juniperus virginiana* / Eastern Red Cedar *Picea glauca* / White Spruce *Picea pungens* / Colorado Spruce *Pinus nigra* / Austrian Pine *Pinus strobus* / Eastern White Pine *Pseudotsuga menziesii* / Douglasfir *Thuja occidentalis* / American Arborvitae	100-110 Large Evergreen Trees	8-10' ht.
	25-30 Small Evergreen Trees/ Medium Evergreen Shrubs	6-8' ht.
Shrubs:		
Clethra alnifolia / Summersweet *Cornus racemosa* / Gray Dogwood *Corylus americana* / American Hazelnut *Forsythia x intermedia* / Border Forsythia *Ilex glabra* / Inkberry *Juniperus communis* / Common Juniper *Juniperus* 'Pfitzeriana' / Pfitzer Juniper *Kalmia latifolia* / Mountain Laurel *Myrica pensylvanica* / Northern Bayberry *Potentilla fruticosa* / Bush cinquefoil *Prunus maritima* / Beach Plum *Rhus typhina* / Staghorn Sumac *Rosa virginiana* / Virginia Rose *Viburnum dentatum* / Arrowwood Viburnum	45-50 Small / Medium Deciduous Shrubs	24-30" ht.
	10-15 Small Evergreen Shrubs	24-30" ht.

ZONE 4 - WETLAND BUFFER SLOPE REPLANTING

Trees:		
Acer rubrum / Red Maple *Acer saccharum* / Sugar Maple *Amelanchier canadensis* / Shadblow *Fraxinus pennsylvanica* / Green Ash *Nyssa sylvatica* / Tupelo *Platanus occidentalis* / Sycamore *Quercus alba* / White Oak *Quercus palustris* / Pin Oak *Quercus rubra* / Red Oak *Tilia americana* / American Linden	16 Large Deciduous Trees	3" Caliper
Shrubs:		
Clethra alnifolia / Summersweet *Comptonia peregrina* / Sweetfern *Ilex glabra* / Inkberry *Kalmia latifolia* / Mountain Laurel *Myrica pensylvanica* / Northern Bayberry *Prunus maritima* / Beach Plum *Rhododendron maximum* / Rosebay Rhododendron *Rhus typhina* / Staghorn Sumac *Rosa virginiana* / Virginia Rose *Spirea latifolia* / Meadowsweet *Viburnum dentatum* / Arrowwood Viburnum	55-60 Small Deciduous Shrubs	24-30" ht.
	50-55 Small Evergreen Shrubs	24-30" ht.

ZONE 5 - NEW PARKING LOT ORNAMENTAL & STREET TREE PLANTING

Street Trees:		
Acer rubrum / Red Maple *Acer saccharum* / Sugar Maple *Fraxinus americana* / American Ash *Fraxinus pennsylvanica* / Green Ash *Ginkgo biloba* / Ginkgo *Gleditsia triacanthos* var. *inermis* / Thornless Honeylocust *Platanus x acerifolia* / London Planetree *Quercus palustris* / Pin Oak *Quercus rubra* / Red Oak *Tilia americana* / American Linden *Tilia cordata* / Littleleaf Linden *Zelkova serrata* / Japanese Zelkova	15 Large Deciduous Trees	3" Caliper
Small Flowering Trees:		
Amelanchier canadensis / Shadblow *Cercis canadensis* / Eastern Redbud *Cornus florida** / Flowering Dogwood *Cornus kousa** / Kousa Dogwood *Malus floribunda** / Japanese Crabapple *Malus sargenti** / Sargent Crabapple *Prunus cerasifera** / Cherry Plum *Prunus serrulata** / Japanese Flowering Cherry *Prunus x yedoensis* / Yoshino Cherry *Syringa recticulata* / Japanese Tree Lilac	25-30 Small Flowering Deciduous Trees	2" Caliper / 10-12' ht.
Shrubs:		
*Azalea species** / Hybrid Flowering Azalea *Cornus baileyi* / Redstem Dogwood Cultivar *Forsythia x intermedia* / Border Forsythia *Hydrangea macrophylla** / Bigleaf Hydrangea *Ilex glabra* / Inkberry *Ilex meserveae** / Meserve Hybrid Holly *Juniperus chinensis** / Japgarden Juniper *Juniperus horizontalis* / Creeping Juniper *Prunus laurocerasus* / Cherrylaurel *Rhododendron Catawbiense** / Rhododendron hybrid *Spirea x bumalda** / Bumald Spirea *Syringa meyeri* / Meyer Lilac	25-30 Medium Deciduous Shrubs	24-30" ht.
	80-100 Small/Medium Evergreen Shrubs	24-30" ht.
Perennials:		
Coreopsis / Tickseed *Hemerocallis** / Daylily *Echinacea* / Coneflower *Rudbeckia* / Black Eyed Susan *Specific named cultivars to be determined.	200-300 Perennials	1 Gallon

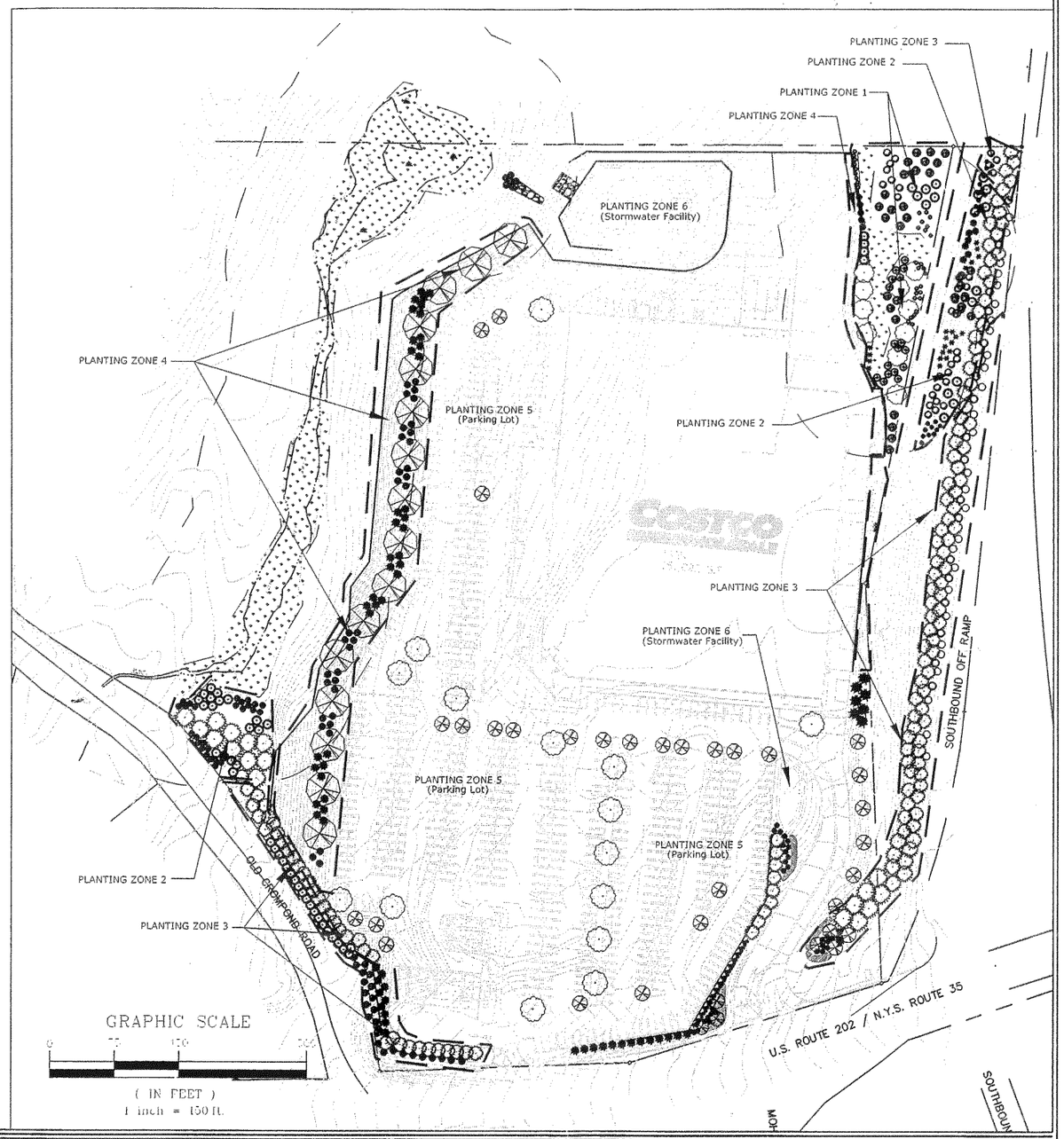
ZONE 6 - STORMWATER BASIN/ RAIN GARDEN PLANTING

Shrubs:		
Alnus incana / Speckled Alder *Aronia arbutifolia* / Red Chokeberry *Cornus sericea* / Redstem Dogwood Dogwood *Ilex verticillata* / Winterberry *Myrica pensylvanica* / Northern Bayberry *Vaccinium corymbosum* / Highbush Blueberry *Viburnum dentatum* / Arrowwood Viburnum	45-50 Small/Medium Deciduous Shrubs	18-24" ht.
Herbaceous Wetland Plugs:		
Acorus americanus / Sweetflag *Juncus effusus* / Soft Rush *Iris versicolor* / Blue Flag Iris *Peltandra virginica* / Arrow Arum *Scirpus cyperinus* / Woolgrass	500 Native Wetland Plugs	2" Plug

SLOPE SEEDING NOTES:

The new 2 to 1 slopes located in Zones 3, 4, and 5 should be seeded with New England Conservation Wildlife mix at the rate specified by the Manufacturer. Seed mix available from New England Wetland Plants, Amherst, MA. Seeded slopes shall be covered by a suitable erosion control blanket.

Parking lot islands are to be mulch, gravel, or lawn as determined by the Owner. All parking lot islands shall be backfilled with a planting mixture suitable for long-term tree health.



TRC Engineers, Inc.
7 Skyline Drive
Hawthorne, New York 10532

Exhibit III.E-5
Conceptual Planting Layout Plan

COSTCO WHOLESALE
Town of Yorktown, New York

Source: Evans Associates Environmental Consulting, Inc.

Planting Zone 1 includes wetland buffer enhancement plantings around the perimeter of the wetland in the northeast corner of the site (Wetland B). This zone consists of planting the wetland buffer that is currently vegetated with a mix of native and non-native species with native large deciduous trees, medium deciduous shrubs and small deciduous shrubs.

Planting Zone 2 consists of wetland buffer enhancement plantings as well as road screening plantings in two areas of the site. The first area in Planting Zone 2 is the southwest corner of the site along Old Crompond Road. The understory in this area is sparsely vegetated and the herbaceous layer is dominated by garlic mustard. This area will be planted with a mix of evergreen and deciduous trees that will enhance the wetlands buffer as well as provide screening for the Costco building. The second area is located to the east of Wetland B off site in the west sloping right-of-way for the Taconic Parkway. The right-of-way is currently vegetated with a mix of grass species along with Queen Anne's lace and bull thistle. The portion of the right-of-way that is within the buffer for Wetland B will be planted with large and small evergreen trees along with evergreen and deciduous shrubs. The slope will also be seeded with a conservation wildlife seed mix that consists of native species.

Planting Zone 3 consists of road screen plantings along Old Crompond Road, NYS Route 35/202 and the embankment of the Taconic Parkway. The embankment along Old Crompond Road will be disturbed as part of the site grading activities. The west sloping right-of-way for the Taconic Parkway is currently vegetated with a mix of grass species along with Queen Anne's lace and bull thistle. These areas will be planted with large and small evergreen trees, medium and small evergreen and deciduous shrubs. The slope will also be seeded with a conservation wildlife seed mix that consists of native species.

Planting Zone 4 consists of replanting the slope on the west side of the parking lot that is within the buffer of the western wetland (Wetland A). This area will be planted with large and small deciduous trees along with small deciduous and evergreen shrubs. The slope will also be seeded with a conservation wildlife seed mix that consists of native species.

Planting Zone 5 includes new parking lot ornamental and street tree plantings. The ornamental plantings include large deciduous trees, small flowering deciduous trees, evergreen and deciduous shrubs along with perennials.

Planting Zone 6 includes the stormwater basin. The stormwater basin will be planted with native shrubs and herbaceous species.

c. Provide a List of Proposed Plants and Trees with Consideration for Native and Non-invasive Species

The lists of species that are proposed within the six planting zones are included on the *Conceptual Planting Layout Plan, Exhibit III.E-5*. Only native species are proposed within the wetland buffer planting zones (Zones 1 and 2), the wetland buffer slope replanting (Zone 4) and the stormwater basins (Zone 6). The road screening planting zone (Zone 3) and new parking lot ornamental and tree planting zone (Zone 5) include a mix of native and non-native species.

d. Propose a Maintenance/ground Keeping Plan that Specifies Chemicals and their Intended Use; e.g. Fertilizer, Pesticide, Herbicides

The limited use and proper application of fertilizers, pesticides, herbicides and other chemical treatments necessary for landscape maintenance/ground keeping on the Project Site will be in strict accordance with the County fertilizer law (http://www.westchestergov.com/pdfs/ENVFACIL_2008LawnFertilizerLaw.pdf) and other applicable regulations. Since landscape maintenance/ground keeping will be performed by a licensed landscaped contractor, there will be no storage of fertilizers, pesticides, or herbicides onsite for that purpose.